5.7. MPE

5.7.1. Limit

According to §1.1310 and §2.1091 MPE is calculated.

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
0.3 - 1.34	614	1.63	*(100)	30
1.34 - 30	824/f	2.19/f	*(180/ f^2)	30
30 - 300	27.5	0.073	0.2	30
300 - 1500	.....	.....	f/1500	30
1500 - 100.000	.....	.....	1.0	30

F = frequency in MHz
* = Plane-wave equivalent power density

5.7.2. Maximum Permissible Exposure Prediction

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$S = PG/4\pi R^2$

S = Power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna.

Note:

1. Manufacturer declared that the maximum antenna gain is 3.0 dBi.

2. Manufacturer declared that the nearest distance between human and the EUT is 20cm.

3. Only record worst case data.

802.11b

Max Peak output Power at antenna input terminal	17.19	dBm
Max Peak output Power at antenna input terminal	52.36	mW
Prediction distance	20	cm
Prediction frequency	2412	MHz
Antenna Gain(typical)	3.0	dBi
Antenna Gain(numeric)	2.0	
Power density at prediction frequency(S)	0.0208	mW/cm2
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm2

802.11g

Max Peak output Power at antenna input terminal	15.82	dBm
Max Peak output Power at antenna input terminal	38.19	mW
Prediction distance	20	cm
Prediction frequency	2462	MHz
Antenna Gain(typical)	3.0	dBi
Antenna Gain(numeric)	2.0	
Power density at prediction frequency(S)	0.0152	mW/cm2
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm2

5.7.3 Test Results

The power density level at 20cm is 0.0208mW/cm²(802.11b), 0.0152mW/cm²(802.11g), which is below the uncontrolled exposure limit for WIFI band.